

ACKNOWLEDGEMENTS

I would like to thank Dr. R. L. Kitching for reviewing the manuscript.

LITERATURE CITED

- CORBET, A. & H. M. PENDLEBURY. 1978. The Butterflies of the Malay Peninsula. Third Edition revised by J. N. Eliot. Malayan Nature Society, Kuala Lumpur, Malaysia.
- EMMEL, T. C. 1976. Butterflies. Thames and Hudson, London.
- FLEMING, W. A. 1975. Butterflies of West Malaysia and Singapore, Vol. 1. E. W. Claxsey. Faringdon, Berkshire, England.
- SCOTT, A. 1974. The interaction of behavior, population biology and environment in *Hypaurotis crysalus* (Lepidoptera). Amer. Midl. Nat., 91: 383-394.

GENERAL NOTE

Journal of the Lepidopterists' Society
36(1), 1982, 60-61

**DOWNY WOODPECKERS AS PREDATORS OF
HYALOPHORA CECROPIA PUPAE**

The leaf-drop of a large silver maple (*Acer saccharinum* L.) in my yard during the fall of 1979 revealed 12 cocoons of *Hyalophora cecropia* (Hübner) scattered among its branches, many twenty to thirty feet above the ground. These pupae developed from eggs laid by the captivity-mated females I released the preceding spring. I felt content in thinking there would be a good source of wild males should I need them for backcrosses in my hybridization studies in this moth genus. Consequently, I decided not to collect them for storage as I usually do.

On 20 December 1979, as I returned from a late afternoon walk on an unusually clear cold day, I heard a pecking noise in the tree as I passed beneath it. To my chagrin, on a high branch a female downy woodpecker (*Dendrocopos pubescens* L.) was pecking one of the cocoons. It was perched on the cocoon, pecking with some difficulty as the flexible branch moved with the force of its bill. I repeatedly tried to drive it away but it always quickly returned and continued to peck. This experience recalled my discussion with Drs. Dale F. Schweitzer and Charles L. Remington at Yale University earlier in the season of jays feeding on the pupa in cocoons and the studies of Waldbauer, Sternburg et al. (1967, Ann. Entomol. Soc. Amer., 60: 97-101; 1967, Ecology, 48: 312-315; 1970, Ann. Entomol. Soc. Amer., 63: 1366-1369) in Illinois of woodpecker predation on *Hyalophora cecropia* cocoons.

I then gathered all the cocoons I could reach with a twelve-foot extension pruner. Most had holes in them, as shown in Fig. 1. I opened several to find in most a shriveled pupal shell, its contents cleverly removed, likely by the tongue of the woodpecker. Of the seven cocoons I was able to reach, only one appeared to contain a living pupa.

I was further surprised to observe that the woodpecker seems to know which cocoons contained viable pupae, since those containing parasitized pupae appeared to be purposely avoided. Two cocoons contained dead larvae with tell-tale shriveled egg shells of tachinid parasites on their surfaces.



FIG. 1. Cocoon of *Hyalophora cecropia* with evidence of predation.

Perhaps, the woodpecker is able to hear or feel the rattle of a dry, shriveled pupae in the cocoon as it pecks, and hence avoids the wasted energy of drilling a hole through a tough pupal case only to find no food within.

It was extremely interesting to observe the behavior of this woodpecker as it methodically destroyed the remaining viable cocoons beyond my reach in the tree. There is no doubt woodpeckers find pupal Saturniidae a highly attractive food source during the winter.

THOMAS R. MANLEY, *Department of Biology, Bloomsburg State College, Bloomsburg, Pennsylvania 17815.*